Data symbol 352 chips	Training Sequence 144 chips	Data symbol 352 chips	GP16 CP

$\longleftarrow$ 864*T_c $\longrightarrow$

FIG. 1

Sampled signals

Active midamble detector
Compare with threshold — User 1 active flag

To MUD module

Midamble 1
matched filter — Estimation of $A_1 h$ — K

Active midamble detector
Compare with threshold — User 2 active flag

To MUD module

Midamble 2
matched filter — Estimation of $A_2 h$ — K

Active midamble detector
Compare with threshold — User i active flag

To MUD module

Midamble i
matched filter — Estimation of $A_i h$ — K

Active midamble detector
Compare with threshold — User N active flag

To MUD module

Midamble Nu
matched filter — Estimation of $A_{Nu} h$ — K
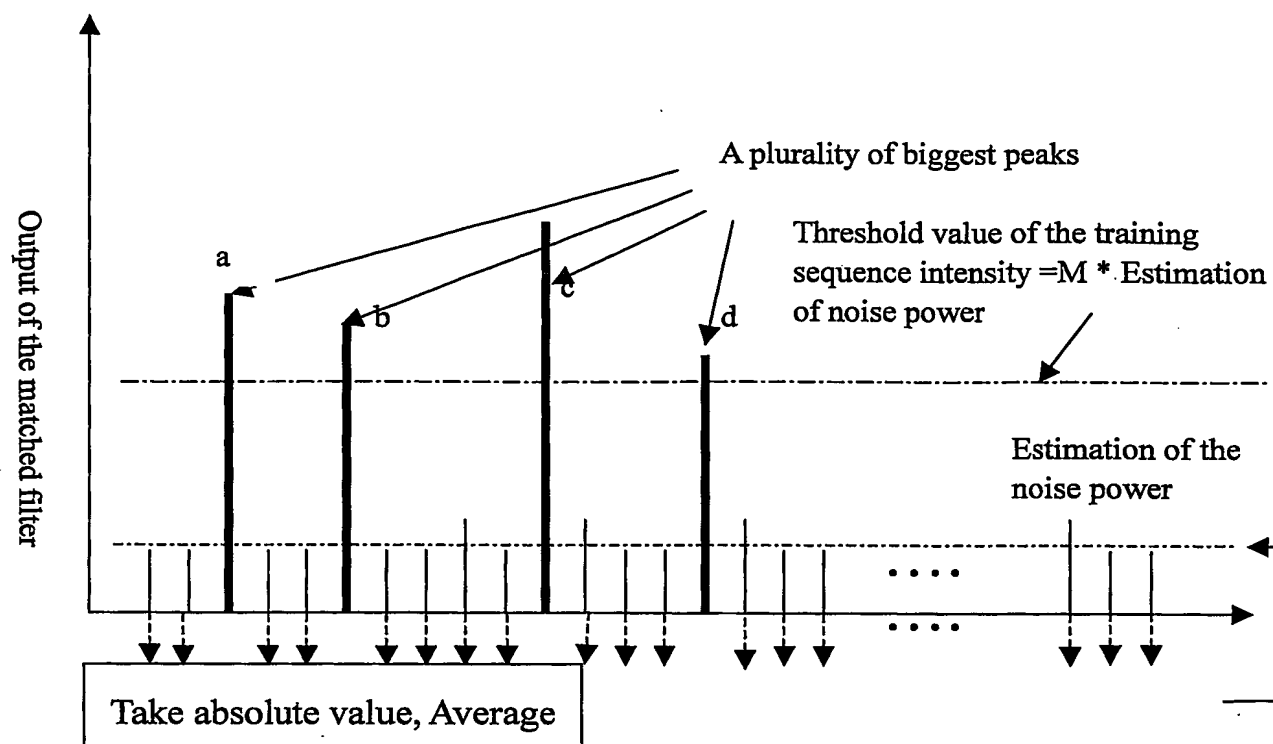
M R C

Channel

Estimation h
and A_i

to MUD

FIG. 2

FIG. 3

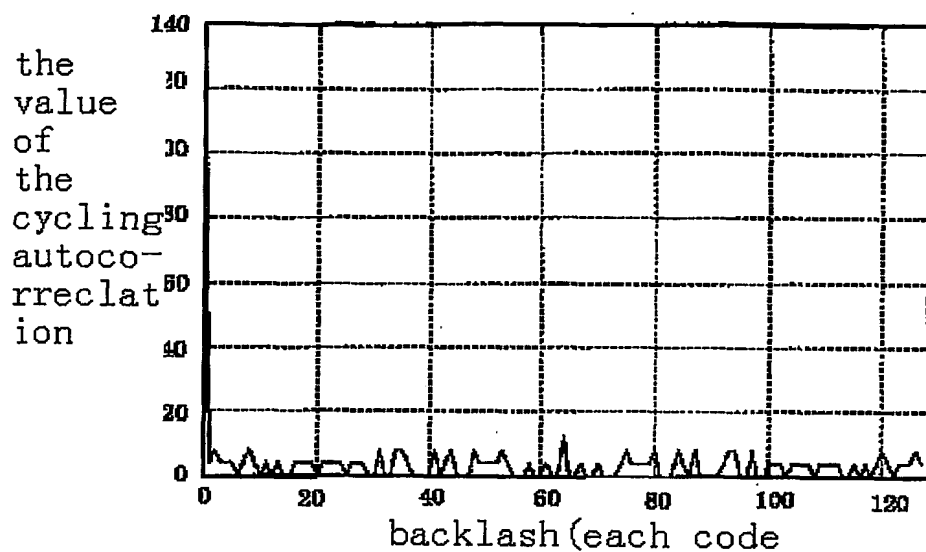the cycling autocorrelation of the basic
midamble in TD-SCDMA

the
value
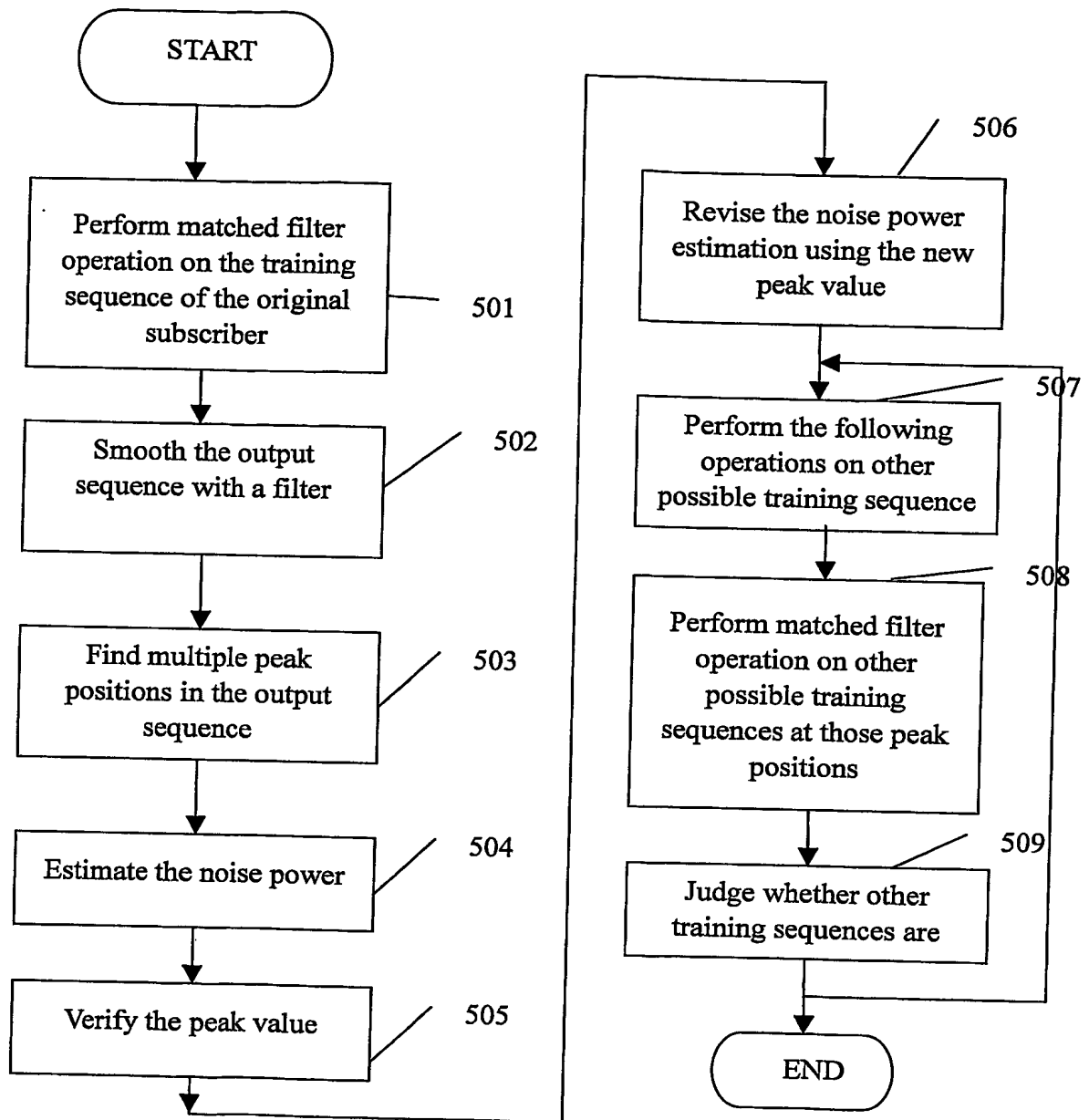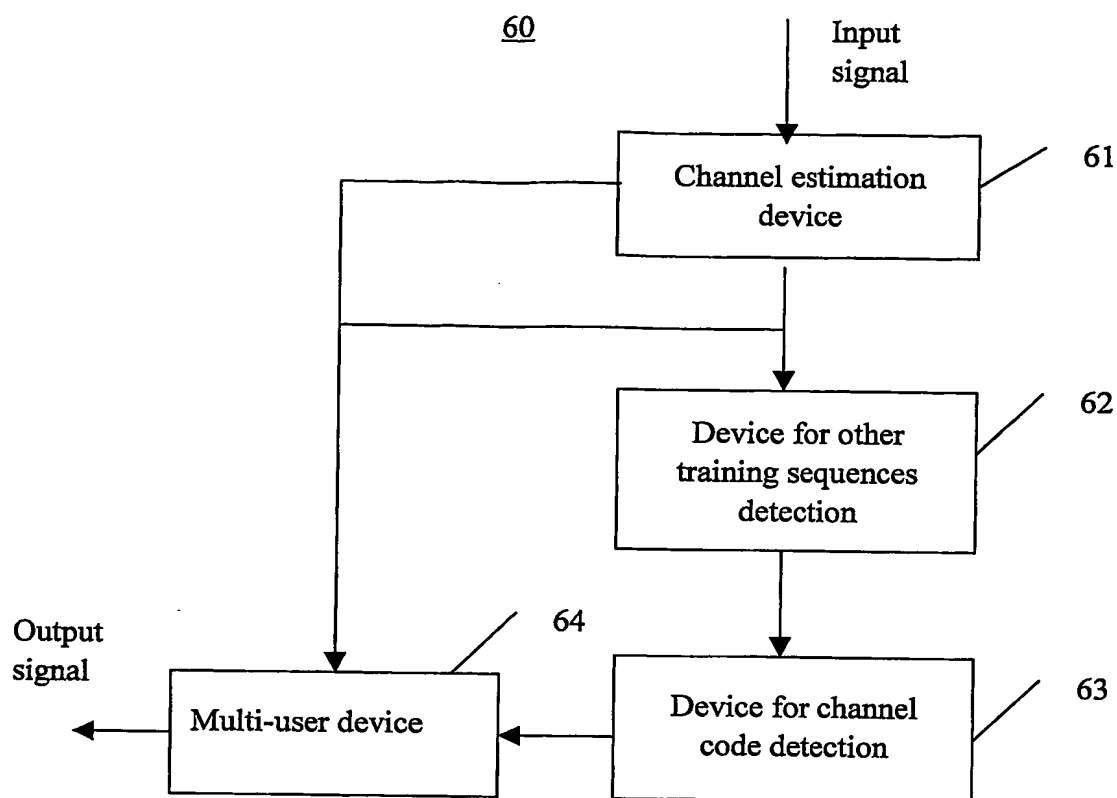of
the
cycling
autoco-
rreclat
ion

backlash (each code

FIG. 4

START

Perform matched filter operation on the training sequence of the original subscriber — 501

Smooth the output sequence with a filter — 502

Find multiple peak positions in the output sequence — 503

Estimate the noise power — 504

Verify the peak value — 505

Revise the noise power estimation using the new peak value — 506

Perform the following operations on other possible training sequence — 507

Perform matched filter operation on other possible training sequences at those peak positions — 508

Judge whether other training sequences are — 509

END

FIG. 5

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FIG. 6